CHAPTER 2 - COLLINS & PERT LOT

PROPERTY DESCRIPTION AND LAND USE HISTORY

The Collins & Pert lot is located in the northeast side of Appleton. It is on the south side of Lower Road, about ¾ mile from W. Appleton Road. Road frontage is about 500'. The property extends about 4,100' southeasterly towards the Back Road, but stops about 1,300' from it (downhill from a hayfield). The property totals 125 acres. About 7 acres are in an open grass and shrub swamp and 118 acres are forested. Of the forested area, 25 acres are forested wetlands. Two forks of Pettengill Stream flow southwestward through the parcel. The property was acquired by the town of Appleton in 1957.

As with most woodland in this area of Maine, the ownership was farmland (mostly as pasture) a century and a half ago. Stone walls and barbed wire form some sections of the west and south boundaries. The property has been commercially harvested before town acquisition, about 50 years ago.

TOPOGRAPHY AND ACCESSIBILITY

The terrain of the property is mostly flat or gently to moderately sloping. The southeast end slopes more steeply. The 2 drainages divide the uplands into 3 sections – adjacent to Lower Rd., a peninsula extending down from the Bailey property on the northeast side, and the southeast end. The highest elevation is the southeast boundary at about 360'. The lowest point is 260', which defines the edge of the swamps of the Pettengill. Occasional ledge is exposed on some of the slopes.

The south fork of the Pettengill flows through a wooded wetland. The stream drains Whitney Bog, northeast of the town property on the Appleton/Searsmont border. A black spruce bog is in northern of the 2 east corners. The swamp extends around the south end of the peninsula to the north fork. It also borders 3 sides of a slightly higher and drier "island" along the west boundary. The north fork flows south from the north side of Lower Rd. It first goes through a wooded wetland in the north corner of the town lot, then enters a shrub and grass swamp. It finally flows back into a wooded area along the west boundary.

Direct access to the property is from Lower Road on the northwest side. An old woods road drops down the slope to the north fork. Because of the divergence of the boundary line and the town road, it seems that the first dozen or so feet of this road are on another property. It crosses the north fork, enters the peninsula and then fades away. Drier land further southeast could be reached only across frozen swamp and stream. Other approaches would have to be with permission from adjoining landowners. One way into the peninsula is from the Bailey lot via a woods road, which ends at the property line. The east end can be reached from Back Rd. only across or on either side of the hayfield.

BOUNDARIES

The property has not been surveyed. The southwest boundary, the longest of all the lines, starts at an iron pin at Lower Rd. and follows a stone wall for about 800'. It is also blazed with red paint. Both the paint and the wall end but the line is flagged and cleared along pieces of barbed wire. The flagging continues to the swamp adjacent to the Pettengill Stream south fork. A stone wall picks up southeast of the stream and runs uphill about 300'. The remaining 500' is unclear. The southeast line along the contour is a stone wall. The line back downhill has old flagging until the swamp. New flagging was put up through the swamp to the edge of the peninsula, approximately where there is a corner. But since this corner and the next one in the bog to the northeast are unmarked, the lines are unclear and the flagging only approximate.

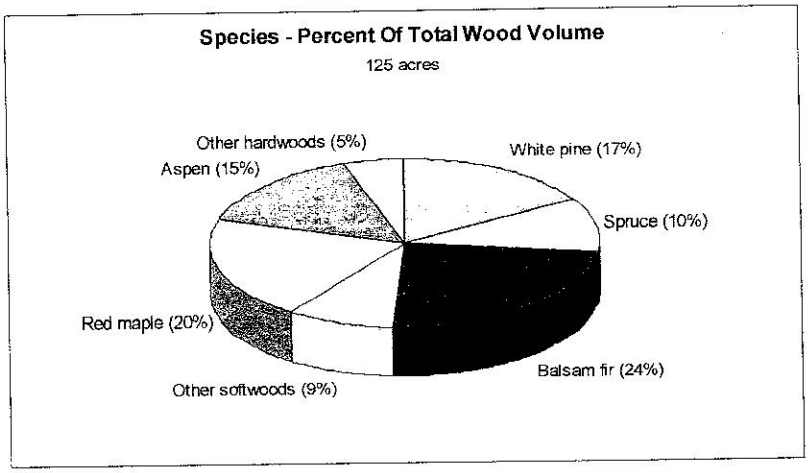
Although the north corner in the swamp allegedly has an iron pin, it was not found under 3' of snow. The flagging along the northwest boundary is only approximate. The northeast line along Bailey is not marked. It seems to pass by the end of Bailey's wood road. A yellow painted trail continues onto town land. It twists and turns before settling onto the same bearing as the boundary. This trail was confused for the boundary closer to the swamp and pink flagging was extended out into the swamp. In hindsight, this flagging is wrong. In fact, more of the northeast line is actually in swamp.

TIMBER RESOURCE

Forests cover 118 acres of the Collins & Pert lot. An open shrub/grass swamp with no wood volume (stand 7) accounts for 7 acres. Two stands are forested wetlands (stands 6 & 8), while the others (#1-5) are on drier uplands. The distribution of timber type among the 7 forested stands are:

Type	# of stands	# of acres	% of total
Softwood	1	11	9
Mixedwood (softwood-dominated)	2	44	37
Mixedwood (hardwood-dominated)	3	55	47
Hardwood	1	8	7
	7	118 acres	100%

In February, 2001, inventory data were taken in the forested areas at 69 variable radius plots on cruise lines running parallel to the southwest boundary. One plot represents an average of 1.7 acres. The overall volume estimate is accurate within ±7% nine times out of ten. Error is greater for individual species, products, and values.



The above graph shows a breakdown of total wood volume among species. Softwood makes up 60% of the volume. Only 5 tree species make up the bulk of the commercial round wood (trees 6"+ dbh). Fir accounts for ¼ of the total. Other high volume species, in descending order, are red maple, white pine, aspen and spruce. Less common species present include cedar, hemlock and white birch. White ash, yellow birch, red oak, tamarack, sugar maple and black cherry are present in very small amounts.

Forest stands are further identified based on dominant canopy height and canopy closure. Much of the woodland is made up of mature pole and sawtimber size trees that are 75-80 years old. Canopy heights for most stands are either tall or moderate to tall. Elsewhere in the mature woods, there are occasional open pockets containing younger saplings and stump sprouts. Forest canopies are fully closed on the upland stands. Canopies in the swamps are moderately closed. Very large white pines that escaped the last harvest remain scattered, mostly on the peninsula.

Tree quality, defined as trees with the potential to become sawtimber, is below that of the typical woodlot. Most of the unacceptable trees are fir, which virtually always is considered pulpwood, due to its predisposition towards early onset of internal rot. Having reached their physiological maturity, some of the firs have died. These are either still standing as snags or have fallen over, adding coarse woody debris to the forest floor. Others are in serious decline. Many of the maple and aspen are also poor quality. Some of the stems are designated as pulp due only to small size and is actually good quality growing stock. Many of the larger pine exhibit an open-grown form of many large lower limbs and multiple stems, which degrade the tree's quality. There are, however, certainly some nice individual stems. White pine, red spruce and red oak are the most valuable species. Through a program of cutting the poor quality individuals and favoring the better trees, overall tree quality will be maintained or improved over time.

The estimated total wood volume on the Collins & Pert lot is 179,000 board feet of sawtimber and 2,850 cords of pulpwood. This is worth about $38,700. For the 118 wooded acres, this comes to 1,520 board feet and 24 cords per wooded acre, which is about average for forests in this part of Maine. The wood is valued at about $328/acre, which is low. Sawtimber volume is dominated by softwood (86%), primarily pine and spruce. The pulpwood volume is more evenly divided between soft- and hardwoods. Sawlogs comprise 11% of the total commercial wood volume, which is below average. This percentage will increase over time if the good quality small sawtimber is allowed to continue to grow rather than cut prematurely.

Assuming an average growth rate of ½ cord per acre per year, a sustainable harvest level of 41 cords per year is calculated for the 83 acres of the drier upland stands (1, 2, 3a and 5). For a 15-year cutting cycle, 615 cords can then be harvested. This is only a broad total. Due to variability of age, structure and stocking of the forest types, harvest levels will vary among stands. Some may not be cut at all, while others may possibly experience a heavy regeneration cut.

Tree regeneration is mostly the very shade tolerant fir, present as both seedlings and saplings. Spruce is a distant second, with small amounts of white pine, red maple and aspen in spots. The density of the regeneration depends on light/shade conditions and wetness on the forest floor.

With the deep snow, it was hard to describe shrubs, herbaceous plants and ferns. The only obvious observations were alder and winterberry in the swamps and rhodora, Labrador tea and nannyberry in the bog.

INSECT, DISEASE AND WEATHER INFLUENCES

No significant insect or disease conditions were noted on the Collins & Pert lot. The most serious pathological event is simply the physiological maturity of the fir (plus some quaking aspen) and its current decline and mortality. Many of the old field pines have been affected by the white pine weevil (an insect, the newly hatched larvae of which feed the leading bud at the tips of the trunks and branches). The result is a tree with multiple stems, lowering its economic value. Many of these same pines also have many live lower limbs, a result of growing relatively in the open earlier in its life. These conditions do not harm the tree, but do lower its value as useable sawtimber.

WILDLIFE

The Collins & Pert lot provides several different habitats for wildlife. Fresh water is a critical habitat element for mammals, waterfowl, birds, fish, reptiles and amphibians. Pettengill Stream runs approximately 4,400' through the property. Of state-wide significance, the Pettengill swamp system is Maine Wetland #319 (from a 1989 listing). Most of it is forested, but there's an open shrubby and grassy area along the north fork. It quite likely may have been an old beaver impoundment. There is no recent activity. Waterfowl and other water-based animals are probable visitors. A black spruce bog is located in the northern of the 2 east property corners.

Other wildlife habitat features include small pockets of dense softwood canopy, dense ground level softwood saplings, aspens, and snags (standing dead trees). Deer is common. Intact softwood canopy serves as good potential winter yarding areas for deer, but they may be too small to be fully functional. Cavity trees near the wetland are valuable in providing nesting opportunities for ducks such as wood duck, bufflehead, and golden-eye. Wood duck nesting boxes have been installed in the shrub swamp. Two hunting perches with ladders are also along the edges of this wetland.

The Maine Department of Inland Fisheries and Wildlife has identified the Pettengill Stream and swamp as a Critical Wildlife Habitat. It is Waterfowl and Wading Bird Habitat #6W3 and has a high habitat value. No evidence of threatened or endangered plants or animals was noted during the field work. The bog would be a focused area of concern for these. Should such plants or animals be discovered, appropriate measures should be adopted to ensure protection of their habitat.

RECREATION AND AESTHETICS

Recreational use is not high, probably limited to hunters in the Fall. The property is not posted. Parking and trails are limited. The old woods road does serve as an entranceway into the middle of the lot, but then disappears. Significant aesthetic features are the 2 forks of Pettengill Stream and their associated wetlands.

LEGAL RESTRICTIONS

The entire perimeter of the swamp associated with Pettengill Stream is zoned as Resource Protection. See the General Chapter for details.

ESTIMATES OF TIMBER VOLUMES AND VALUE BY SPECIES

Town of Appleton - Collins & Pert Lot
Appleton, Maine
March 2, 2001

Products, Species		Volume[1,2]	Stumpage[3] Rate	Value[4]
Sawtimber:		MBF	$ per MBF	
	White pine, grade	78	$120	$9,360
	White pine, pallet	26	50	1,300
	Spruce	26	100	2,600
	Hemlock	24	50	1,200
	Red maple	8	40	320
	Red oak	8	200	1,600
	Aspen	6	40	240
	White birch	2	100	200
	Sugar maple/ash	1	140	140
	Totals:	179 MBF		$16,960
Pulpwood:		Cords	$ per cord	
	Spruce-fir	940	$12	$11,280
	Spruce-fir, low grade	110	6	660
	White pine	330	4	1,320
	Cedar	150	0	0
	Hemlock/Tamarack	90	6	540
	Hardwood pulp*	870	5	4,350
	Firewood*	360	10	3,600
	Totals:	2,850 cords		$21,750

Total Estimated Stumpage Value = $38,710

[1] Total timber volume estimate is ± 7% nine times in ten. Error is greater for individual species or products.
[2] Pulpwood volumes include topwood from sawtimber trees.
[3] Stumpage price estimates based on recent local averages, Winter, 2001. They are gross values and do not reflect forester fees.
[4] Represents the "liquidation value" if the entire property was cleared. This is presented for illustrative purposes only and is not recommended.
* Aspen and white birch is pulpwood; balance of the hardwood pulp is split evenly between firewood and pulp

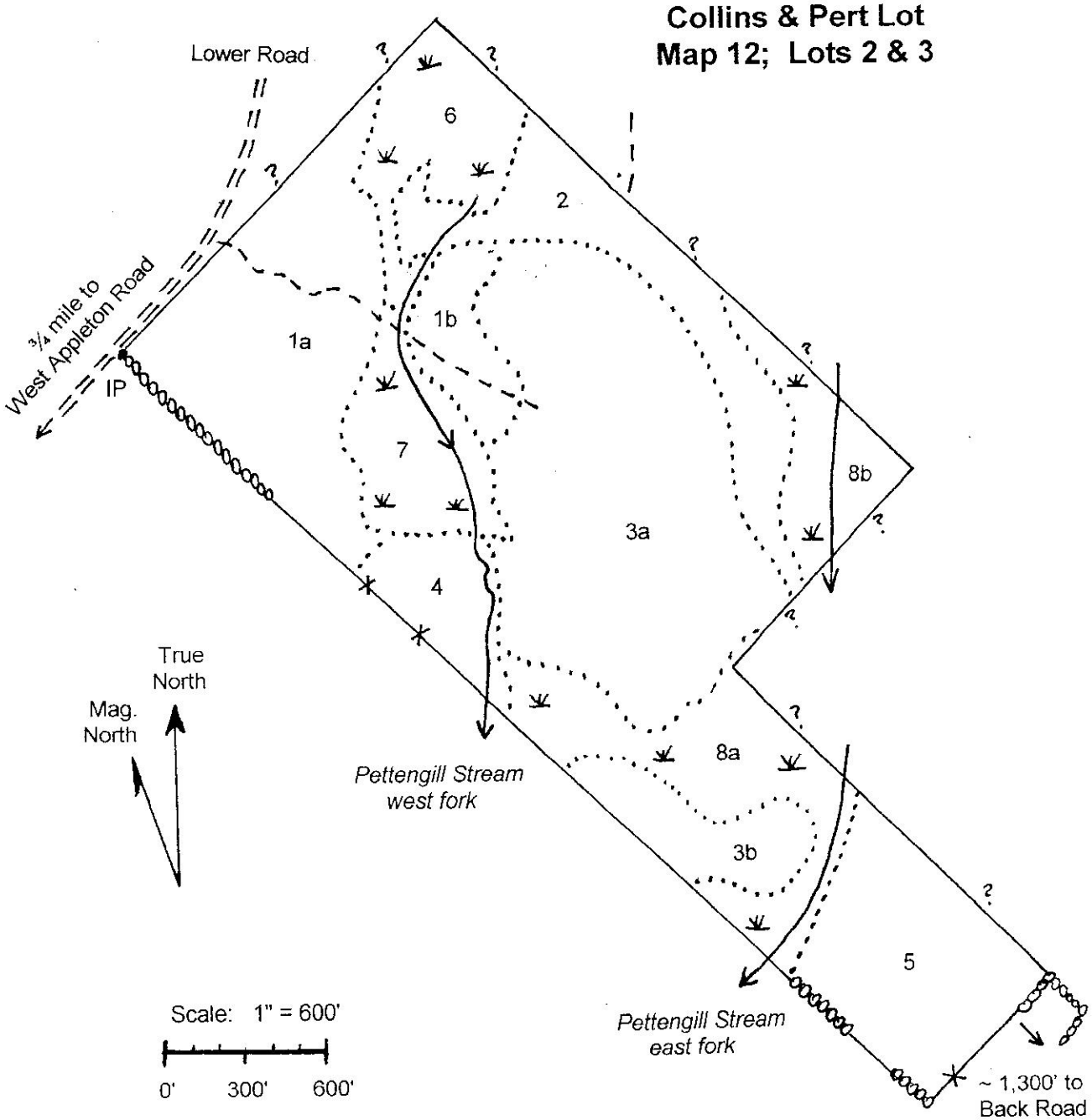
Mitchell Kihn; LPF # 3206
Mid-Maine Forestry

PROPERTY MAP

Town of Appleton

Collins & Pert Lot

Map 12; Lots 2 & 3



LEGEND

Stand number and boundary	2
Iron pin	IP
Stone wall	oooooooooo
Barbed wire remnants	—x—x—
Uncertain property boundary	?
Old woods road	– – – –

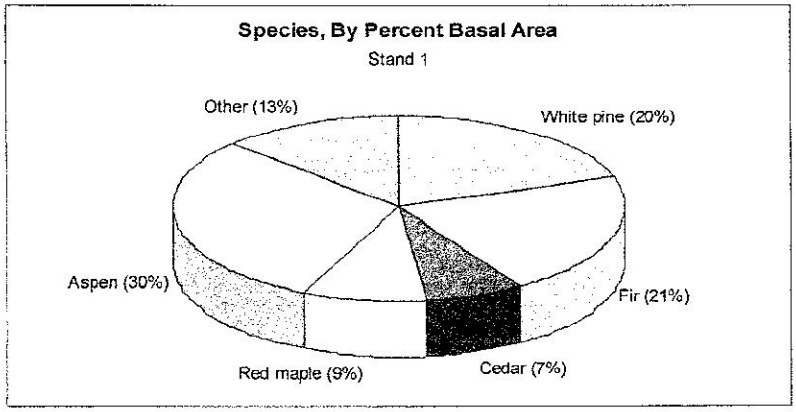
FOREST STANDS

Stand	Type		Acres
1	HS2/3A	Mixedwood pole/sawtimber	24
2	S2A	Softwood poletimber	11
3	SH2/3A	Mixedwood pole/sawtimber	39
4	SH1/2A	Mixedwood saplings/poles	5
5	HS2/3A	Mixedwood pole/sawtimber	14
Swamps:			
6	H2B/C	Hardwood saplings/poles	8
7	SH1B	Mixedwood saplings	7
8	HS2B	Mixedwood poletimber	17
		TOTAL PROPERTY =	125 acres

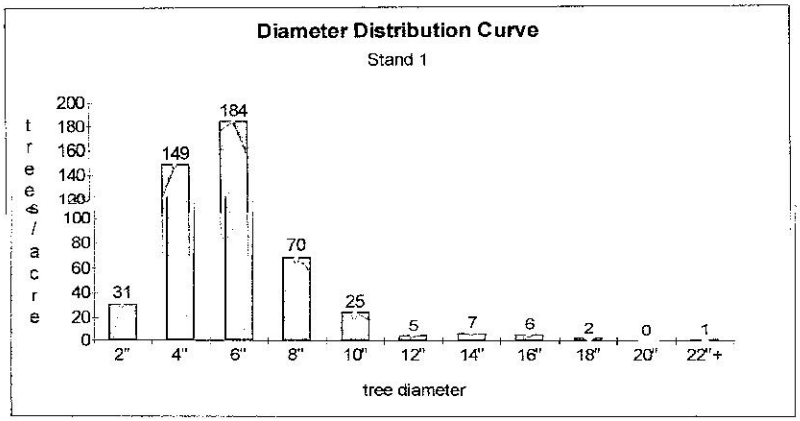
STAND DESCRIPTIONS AND RECOMMENDATIONS

STAND 1 - MIXEDWOOD POLE/SAWTIMBER (HS-2/3-A) 24 acres

Stand 1 is in 2 sections, divided by the Pettengill Stream north branch. The biggest section (1a) is west of the swamp and adjacent to the west and northwest boundaries, as well as partly along Lower Rd. The smaller section (1b) is on the east side of the stream, on the west edge of the peninsula. The woods road runs through both sections. The challenge, though, is crossing the stream and adjacent strips of swamp to access stand 1b. The terrain ranges from flat to moderate slopes. The soil is well drained only near the town road and east of the stream. The ground becomes wetter downslope and is poorly drained near the swamp. Site quality is good to excellent for growing pine. Operability with machines is very good, limited by seasonal ground wetness. The 250' strip along the swamp is zoned as Resource Protection.



Stand 1 is a mixedwood stand. It has more hardwoods than softwoods in the overstory with a mix of poles and sawtimber. Aspen, pine and fir take up nearly ¾ of the growing space. Both red maple and cedar have a modest presence. Other minor species include hemlock, white & yellow birch, oak, ash, spruce, sugar maple and beech. Although the stand contains sawtimber trees, poles are more prevalent. The number of stems per acre peaks in the 6" diameter class. Trees range from 2" to 22"+ in diameter, with an average of 7". For canopy level 6"+ diameter stems, the average tree size is 8". With a basal area of 120 ft^2/acre for canopy stems, stand 1 is in the lower half of the adequately stocked range. Canopy height is a mix of moderate and tall classes. Closure of tree crowns is high.



Tree quality is good. Fir and aspen snags are present. Mortality &/or breakage has created small canopy openings. The average growth rate is about 0.4 cord per acre per year. Standing volume per acre is moderate with 2.2 mbf of sawtimber and 31 cords of pulp. Two-thirds of the sawtimber volume is white pine, some of which are old-field remnants. Nearly half of the pulpwood is aspen, with pine, fir and maple contributing moderate amounts. Sawtimber volume comprises a low 8% of the total volume of commercial wood. Regeneration is inadequate in much of the stand, but fir saplings are dominant elsewhere.

RECOMMENDATIONS

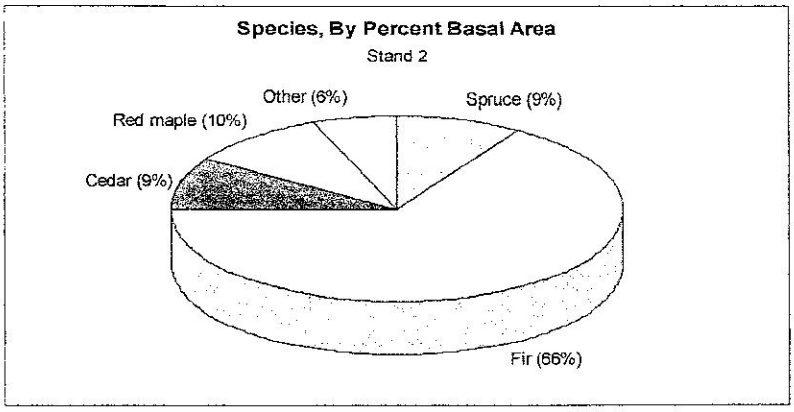
If the long-term objective is timber production, structure goals should be a minimum basal area of 90 ft^2/acre and a largest diameter tree of 24". A 15-year selection harvest cycle will produce a sustainable yield of 120-150 cords per harvest. Manage on an uneven-aged basis.

A light harvest could remove ¼ of the canopy basal area. Favor pine and remove fir. This will yield 120-150 cords for an estimated value of $1,350. Harvesting in stand 1b would depend on crossing Pettengill Stream north fork. Treatment of stand 1 is low priority.

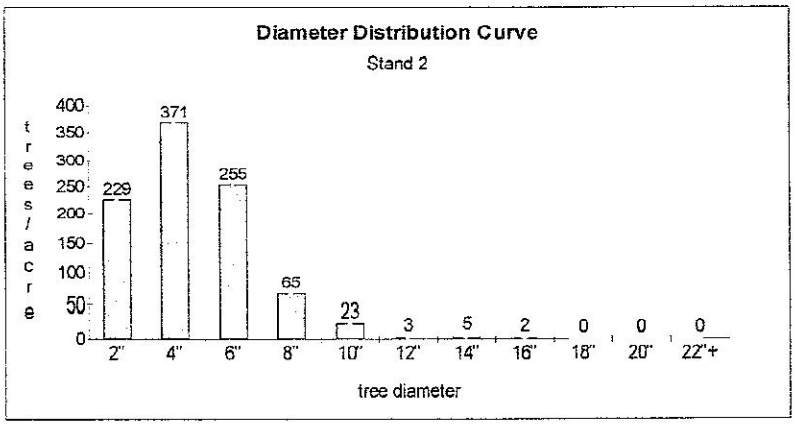
The protection of Pettengill Stream and wetland (for wildlife habitat, aesthetics and ecological integrity) is a high priority. Restraint from harvesting should be more than the legal prohibitions in the 250' Resource Protection Zone. One way is to declare the entire Zone off-limits from tree cutting rather then just the first 75'. This reduces the available area for harvest to 10 acres up against the road and west corner. The next level of protection would be simply to not harvest the stand at all.

STAND 2 - SOFTWOOD POLETIMBER (S-2-A) 11 acres

Stand 2 runs along the northeast boundary and is adjacent to swamps both at its north and south ends. It can be accessed from the neighboring Bailey lot, or by the old woods road through stand 3 (which requires crossing the stream). The terrain flattens near the swamp, but slopes moderately over the middle of the peninsula. The soils are generally moderately deep to shallow to bedrock, except nearer the swamps where it becomes wetter. Site quality is excellent for white pine. Operability with machines is very good. The 250' strips along the swamps are zoned as Resource Protection.



Stand 2 is a softwood stand dominated by fir. There is a modest mix of red maple, cedar and spruce. Small numbers of aspen and white birch are also present. Based on growing space, it is a poletimber stand. Although the greatest number of stems is in the sapling class, they don't add up too quickly. They are mostly understory fir. Trees range from 2" to 16" in diameter, with an average of 5". The basal area is 95 ft^2/acre for canopy stems, which is already the recommended stocking level. This level represents the minimum stocking for adequate growth. The canopy is of medium height and has a closed crown.



Tree quality is fair to good. The fir and maple are generally pulp quality. Some of the spruce are either sawtimber or acceptable growing stock poles. Growth rate is about ½ cord per acre per year. For a softwood stand, volume is moderate at 25 cords of pulpwood and 0.6 mbf of sawtimber per acre. Sawtimber volume comprises a low proportion (5%) of total commercial wood volume. Fir saplings dominate the regeneration.

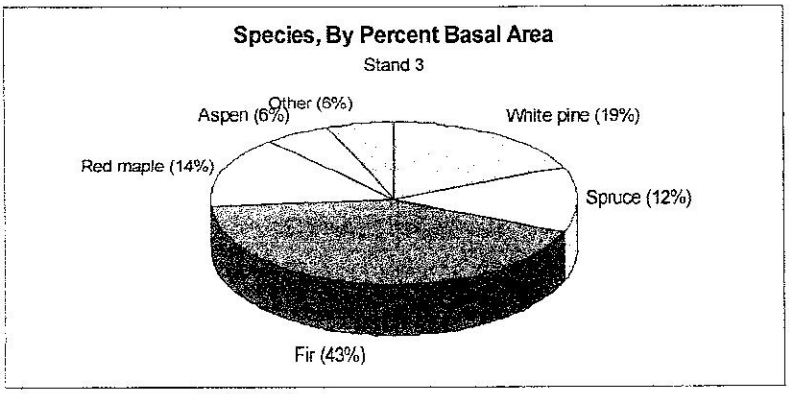
RECOMMENDATIONS

Long-term objective is the protection of the 2 adjacent wetlands, as well as adjoining upland buffer strips for wildlife habitat. Stand 2 could well enough be left alone and natural processes allowed to guide forest development. A significant number of large trees will develop. The eventual creation of snags and fallen coarse woody debris will also occur, and will benefit wildlife.

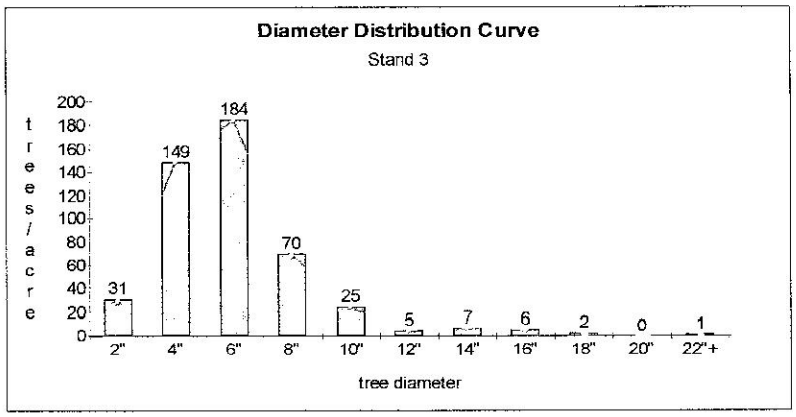
If timber production is the goal, focus on a minimum residual stocking of 80-120 ft^2/acre basal area. The height of land is sufficiently far from the wetlands for limited harvesting. Favor spruce and discriminate against fir through group selection and crop tree release cutting methods. At this time, however, there is minimal volume available to harvest. Let grow and re-evaluate in 10 years.

STAND 3 - MIXEDWOOD POLE/SAWTIMBER (SH-2/3-A) 39 acres

Stand 3 is in 2 units. Stand 3a is the largest and takes up most of the central peninsula. It could be accessed from the old woods road in stand 1 that fords Pettengill Stream north fork. This would be limited to frozen conditions. It could also possibly be accessed from the Bailey property through stand 2. Although included as part of a wooded swamp (stand 8a) on both the topographic and soils maps, stand 3b is actually an upland island in the middle of the swamp. Access is difficult across the swamp and would be limited to the winter season. The terrain is gentle to moderate slopes in stand 3a and flat in stand 3b. Operability with machines is very good. The soils are moderately deep to shallow to bedrock in stand 3a and are well drained. Stand 3b is somewhat poorly drained with a seasonal high water table. Site quality is excellent for growing white pine. Half of stand 3a's perimeter is within the 250' Resource Protection zone of the swamp. Since stand 3b is mapped as a significant wildlife habitat, it is not exempt from the Natural Resources Protection Act, which regulates activities in wetlands. Any timber harvesting would require a permit.



Stand 3 is a mix of hard- and softwoods. Including understory stems, fir dominates the species makeup. Pine, red maple and spruce are also common. Minor associates include aspen, cedar, white birch, black cherry and tamarack. Stems of all sizes are present, but the canopy consists of mostly poles. The number of stems per acre is highest in the 6" diameter class. Trees range from 2" to 40" in diameter, with an average of 7". The biggest trees are the older generation pines of 120± years. The basal area is 115 ft^2/acre for all stems. For 6"+ commercial trees the average diameter rises to 8" and the basal area drops to 102 ft^2/acre. Stocking of commercial trees is adequate. In fact, it is at the recommended stocking level. Small canopy openings are present, due to mortality of fir poles or residual large pine. The canopy is moderate to tall and crown closure is high.



Tree quality is fair to good. The pulp is mostly the fir and some hardwood. Most of the pine and spruce is good quality. Stand 3a contains several dozen large residual pines that are rough and limby. Also, multiple stemmed from the white pine weevil, these trees were pasture trees a half century ago. Growth rate is about 0.4 cord per acre per year. Standing volume is moderate at 26 cords of pulpwood and 2.0 mbf of sawtimber per acre. Sawtimber volume comprises a slightly lower than average proportion (13%) of total commercial wood volume. Where present, the regeneration is mostly fir.

RECOMMENDATIONS

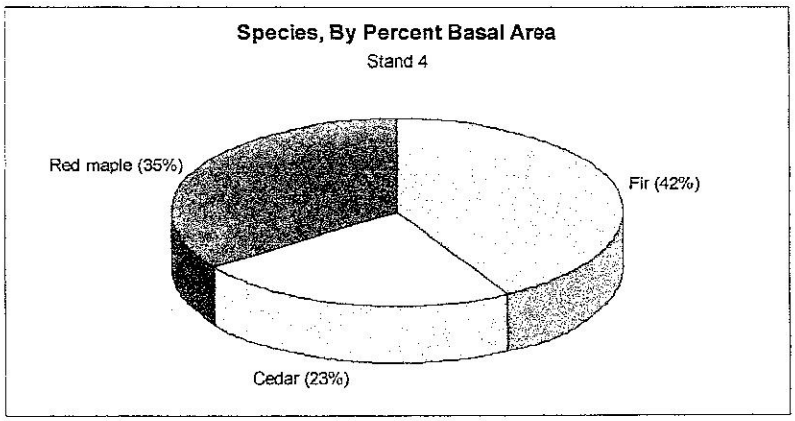
Long-term objective for stand 3a is the protection of the 2 adjacent wetlands (stands 7 and 8a). Like stand 2, it could be left alone and natural processes allowed to guide forest development. Stand structure will become uneven-aged with patchy stocking. A significant number of large trees will develop. The eventual creation of snags and fallen coarse woody debris will also occur, and will benefit wildlife.

If timber production is the goal, focus on the interior of stand 3a. Limit or exclude cutting in the 250' Resource Protection zone adjacent to the swamps. Stocking should be 80-120 ft^2/acre of basal area. Favor white pine and spruce and discriminate against fir through group selection and crop tree release cutting methods. At this time, however, there is minimal volume available to harvest. Let grow and re-evaluate in 10 years.

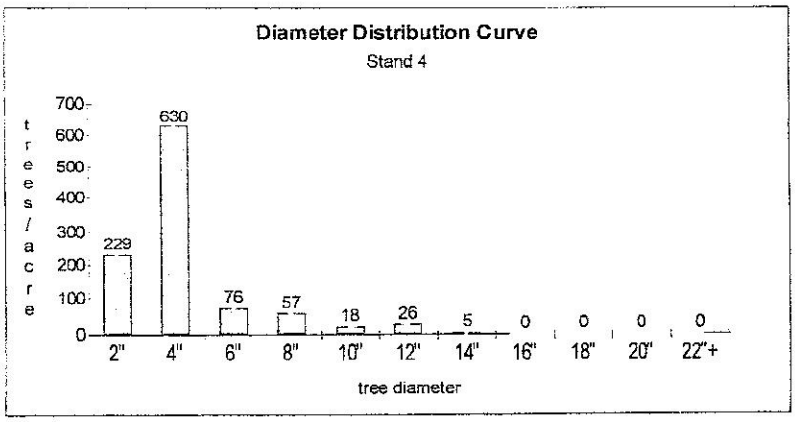
For stand 3b, the long-term management objective is the protection of the wetland and wildlife habitat. It should receive no treatment since it is surrounded by wetland and is within a mapped significant wildlife habitat.

STAND 4 - MIXEDWOOD SAPLINGS/POLES (SH-2/3-A) 5 acres

Stand 4 is along the west boundary, south of stand 1. It is accessible directly from stand 1. The ground is flat with poorly drained soils and a seasonal high water table. Site quality is excellent for white pine. Operability with machines is very good contingent on frozen conditions. The Pettengill Stream north fork flows along the east side of the stand. Like stand 3b, stand 4 is also mapped as a swamp and as a significant wildlife habitat. It is not exempt from the Natural Resources Protection Act, which regulates activities in wetlands and timber harvesting would require a permit.



Stand 4 is composed of fir, red maple and cedar. Canopy trees are sapling and pole size. The number of stems is highest in the 4" diameter class. Trees range from 2" to 14" in diameter, with an average of 5". The basal area is 130 ft^2/acre for all stems. For commercial size 6"+ diameter trees the average diameter rises to 8" and the basal area drops to 70 ft^2/acre. This puts the stocking of commercial trees below the minimum level for a mixed stand. Canopy height is short to moderate and crown closure is high.



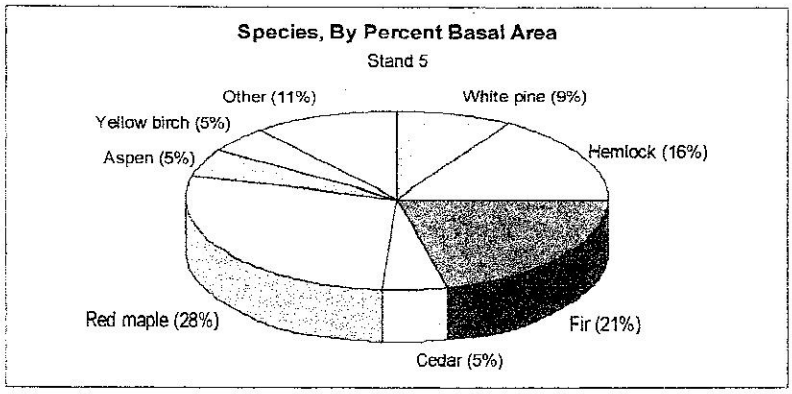
Quality of the canopy trees is fair to good. None of the fir is commercial size. The growth rate is about 0.4 cord per acre per year. Standing volume is very low with 13 cords of pulpwood and no sawtimber per acre. Fir regeneration is common. Alders are also present.

RECOMMENDATIONS

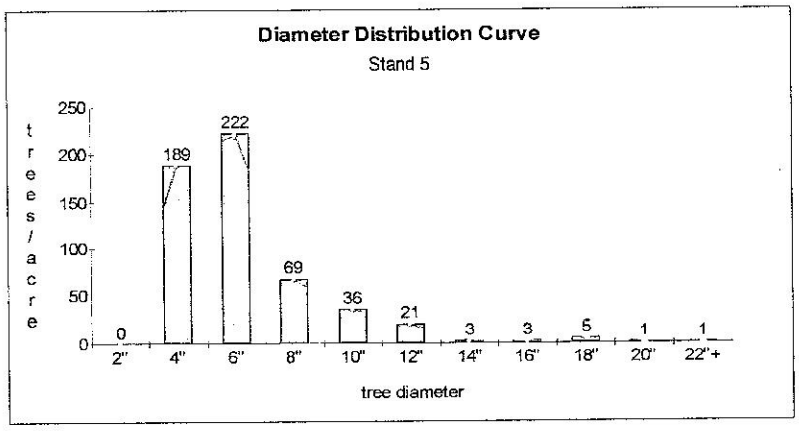
Similar to stand 3a, long-term objective for stand 4 is the protection of the 2 adjacent wetlands (stands 7 and 8a), stream and wildlife habitat. It is within a mapped significant wildlife habitat. It should receive no treatment. Natural processes will guide forest development. Stand structure will become uneven-aged with patchy stocking and scattered large trees. The eventual creation of snags and fallen coarse woody debris will occur, and will benefit wildlife.

STAND 5 - MIXEDWOOD POLE/SAWTIMBER (M-2/3-A) 14 acres

Stand 5 is in the southeast corner of the property. The Pettengill Stream east fork forms the northwest border. Property boundaries are on the stand's other 3 sides. Accessibility is difficult, separated from Lower Road by 3,200' and 2 swamps. Better access is from the other direction, where the Back Road is about 1,300' away across private land. Of course, permission would be needed use this approach. The terrain is moderately steep at the south end, becoming gentler near the stream. The upslope soils are well to moderately-well drained. Downslope soils are poorly drained and wetter. Site quality is good to excellent for white pine. The upslope soils are also excellent for oak. Operability with machines is good, limited by steepness in the south and wetness in the north. About 100' along the north edge of the stand is mapped as part of the significant wildlife habitat, although forest structure is not like the adjacent swamp (stand 8a). The next 250' upslope is a Resource Protection zone.



Stand 5 is a mixedwood stand of poles and sawtimber. Red maple and fir take up half of the growing space. Associates are hemlock, pine, cedar, aspen and yellow birch. White birch, red oak, white ash and elm are also present in small numbers. The hemlock forms a small grove in the stand's east corner. Trees range from 4" to 40" in diameter, with an average of 7". Like stand 3b, the biggest trees are the older generation pines of 120± years. Total basal area is 147 ft^2/acre, but for upper canopy stems it is 130 ft^2/acre. Stocking is adequate for a mixed stand. Canopy height is moderate to tall and crown closure is high.



Tree quality in the stand is good. There is some nice hemlock and oak sawtimber. Many of the hardwoods and fir are pulp quality only. The several large residual pines that are rough, limby and multiple stemmed were pasture trees early in the 20th century. Growth rate is about ½ cord per acre per year. Standing volume is moderately high with 33 cords of pulpwood and 2.6 mbf of sawtimber per acre. Sawtimber volume is less than an average proportion (10%) of total commercial wood volume. Regeneration is limited to mostly fir, plus some spruce and beech.

RECOMMENDATIONS

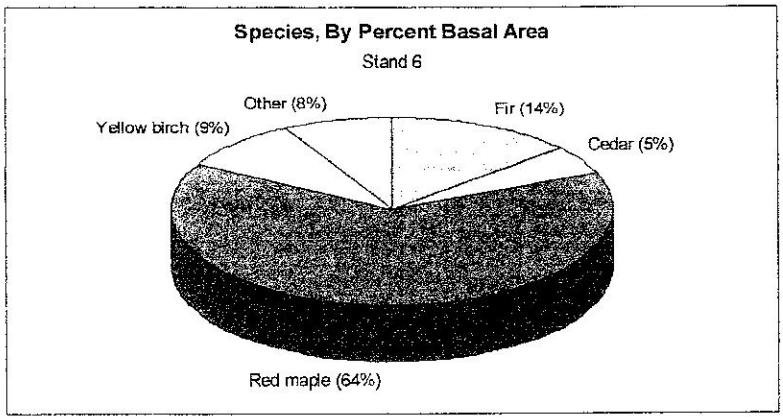
Recommendations are similar to those for stand 1a, a portion of which is also out of the Resource Protection zone and can be accessed without crossing wetlands. If the long-term objective is timber production, structure goals should be a minimum basal area of 90 ft^2/acre and a largest diameter tree of 24". A 15-year selection harvest cycle will produce a sustainable yield of the equivalent of 90 cords per harvest. Manage on an uneven-aged basis.

A harvest at this time could remove 1/3 of the canopy basal area. Favor pine and oak and remove fir. This will yield the equivalent of 120 cords for an estimated value of $1,450. Treatment of stand 5 is moderate priority. A right of way would be needed for access from Back Road.

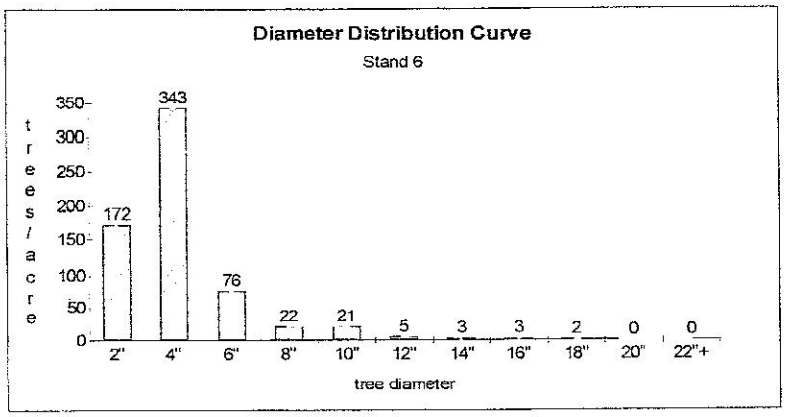
The protection of Pettengill Stream and wetland (for wildlife habitat, aesthetics and ecological integrity) is a high priority. The first 100-150' from the stream is mapped as a wetland with significant wildlife habitat. Harvesting here requires a permit from Maine Dept. of Environmental Protection, but should probably be avoided anyway. Harvest volumes in the 250' Resource Protection Zone are restricted to 40% of the volume. For additional protection, the entire Zone could be declared off-limits from tree cutting. If so, the available area for harvest is reduced to only 8 acres. Otherwise, the stand can simply be left alone to avoid any impact on the wetland.

STAND 6 - HARDWOOD SAPLINGS/POLES (H-2-B/C) 8 acres

Stand 6 is in the north corner of the property. It can be accessed from both stands 1a and 2. It is a wooded swamp, through which Pettengill Stream north fork flows. Terrain is flat and soils are very poorly drained. Both site quality and operability are poor. It is within Maine wetland #319 as well as town wetland #6W3, which has a high wildlife habitat value .



This hardwood stand is dominated by red maple. Associates include fir, yellow birch. Cedar, white birch and ash are also present. It is composed of saplings and poles. Trees range from 2" to 18" in diameter, with an average of 5". The total basal area is 82 ft^2/acre. It is adequately stocked. Canopy height is moderate and crown closure is low to moderate.



Tree quality is generally poor. Growth rate is low, at less than ¼ cord per acre per year. Standing volume is low with only 9 cords of pulpwood and 0.2 mbf of sawtimber per acre. Sawtimber is low 4% of the total wood volume. Regeneration is mostly fir and maple. Woody shrubs are thick, notably alder and winterberry.

RECOMMENDATIONS

The long-term management objective is protection of the wetlands for its intrinsic ecological function and beauty, as well as its value as a wildlife habitat.

Stand 6 should be left undisturbed and left to develop naturally.

STAND 7 - MIXEDWOOD SAPLINGS (SH-1-B) 7 acres

Stand 7 is east of stand 1, from which it can be accessed. It is a shrub/grass swamp. The Pettengill Stream north fork flows southward through it, from stand 6 to stand 4. Terrain is flat and soils are very poorly drained. Both site quality and operability are poor. It is within Maine wetland #319 as well as town wetland #6W3, which has a high wildlife habitat value.

This sapling stand contains a mix of red maple, fir, cedar, white birch and tamarack. The basal area is very low, around 20 ft^2/acre, resulting in adequate stocking. Canopy height is low and crown closure is moderate. Even the saplings are absent from the open grassy middle section of the stand.

No volume inventory was measured for this non-commercial stand. It is premature to judge both tree quality and growth rate of the saplings, but both will probably end up being poor. Woody shrubs are thick, notably alder and winterberry. Spirea and milkweed are in the more open middle.

It likely is an old beaver pond is the process of revegetating, but no old chewed stumps were observed around the margins (above the 2-3' of snow). On both sides of the swamp, stand 1 has plenty of aspen poles.

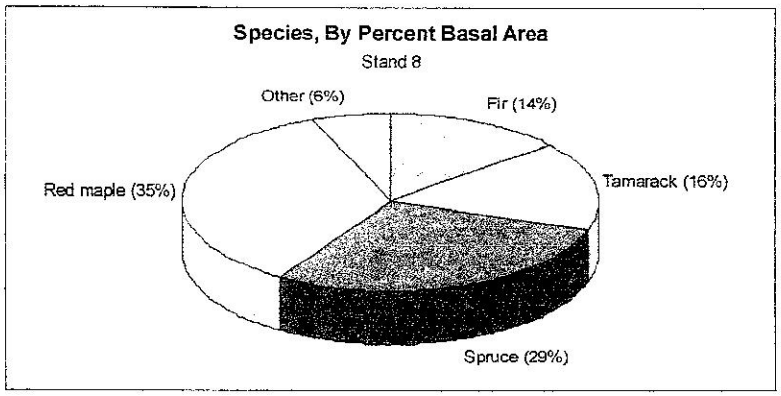
RECOMMENDATIONS

The long-term management objective is protection of the wetlands for its intrinsic ecological function and beauty, as well as its value as a wildlife habitat.

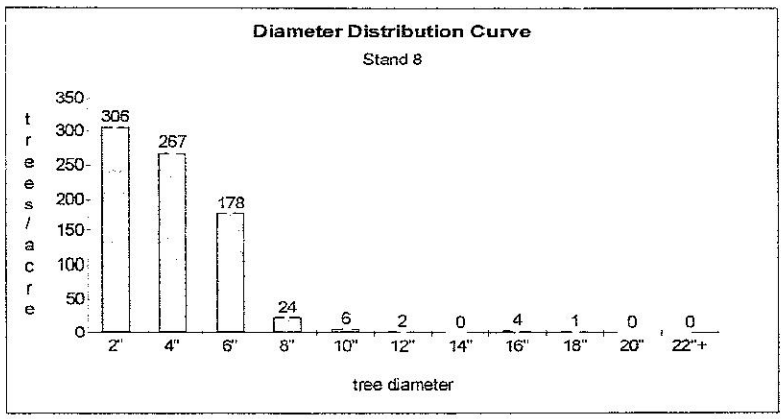
Stand 7 should be left undisturbed and left to develop naturally.

STAND 8 - MIXEDWOOD POLETIMBER (HS-2-B) 17 acres

Stand 8 is in 2 units. Stand 8a lies between the peninsula and the south slope of stand 5. It can be reach from the north through stands 3 or 4. Stand 8b is in the northern of the 2 east property corners, east of stand 2. It is accessed from stand 2. Stand 8 is a wooded swamp, similar to stand 6. Pettengill Stream south fork flows southward through both units. Terrain is flat and soils are very poorly drained. Both site quality and operability are poor because of wetness. Hummocks are common. It is within Maine wetland #319 as well as town wetland #6W3, which has a high wildlife habitat value.



The most common trees in this mixed poletimber stand are red maple and spruce (both red and the swamp-loving black spruce). Associates include tamarack and fir. Cedar and brown ash (another swamp-loving species) are also present in limited numbers. A black spruce bog is in the corner of stand 8b. Trees range from 2" to 18" in diameter, with an average of 4". Most of the growing space is large saplings and small poles. The basal area is 85 ft^2/acre. It is adequately stocked. Both canopy height and crown closure is moderate.



Tree quality is generally poor. Growth rate is low, at about 1/3 cord per acre per year. Standing volume is low with only 13 cords of pulpwood and 0.1 mbf of sawtimber per acre. Sawtimber is a very low 2½% of the total wood volume. Regeneration is mostly fir, with some tamarack and maple. Woody shrubs include alder, winterberry and spirea. The bog in the corner of stand 8b contains rhodora, Labrador tea and nannyberry.

RECOMMENDATIONS

The long-term management objective is protection of the wetland for its intrinsic ecological function and beauty, as well as its value as a wildlife habitat.

Stand 8 should be left undisturbed and left to develop naturally.

CONCLUSIONS

The upland portions of the property (stand 1a in the north; stands 1b, 2 and 3 in the peninsula; and stand 5 in the south) are excellent sites for timber production. However, access is problematic for all but stand 1a. If the protection of the Pettengill Stream wetlands is the highest priority, strong consideration should be given to avoiding commercial timber management from this lot altogether. Alternatively, harvesting can be pursued, but excluded from areas within the mapped wetlands and the 250' Resource Protection Zone. At the very least a 75' no-cut zone along all wetlands plus a 40% harvest limitation must be observed within the Resource Protection Zone. Recreational use and aesthetic enjoyment of the Stream and associated wetlands by the public should continue and possibly encouraged.

SUMMARY OF MANAGEMENT PRIORITIES
2001-2011

Year	Stand	Activity		Estimated Income/(cost)
2001-06	All	Establish location of north and east boundary lines		($38/hr.)
		Blaze and paint all lines (~11,700')		$575
2001-11	1, 3, 4, 5 & 8	Trail establishment, as desired		($?)
2006-11	5	Selection harvest, if desired:	if 12 acres	$1,300
			if 8 acres	$900
2011	All	Update management plan		($?)